AMENDMENTS TO THE CLAIMS

Presented below is a complete set of claims with current status indicators. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 – 55 (Canceled).

56. (Previously presented) A method for passively monitoring physiology of a patient, the method comprising:

engaging a first piezoelectric sensor with the patient by coupling the patient with a patient supporting surface including the first sensor;

engaging a second piezoelectric sensor in a location for sensing environmental noise, but not physiological signals from the patient;

engaging a third piezoelectric sensor with the patient, at a location remote from the first sensor;

sensing physiological signals and environmental noise with the first and third sensors and environmental noise with the second sensor;

isolating the physiological signals from the environmental noise by subtracting environmental noise sensed by the second sensor from the signals sensed by the first and third sensors;

comparing the physiological signals and environmental noise from the first sensor with the physiological signals and environmental noise from the third sensor to determine locations of the first and third sensors on the patient; and

displaying the physiological digital signals.

57 – 88 (Canceled).

89. (Currently amended) A method for passively monitoring the physiology of a patient in an environment, comprising:

coupling a first sensor with the patient;

coupling a second sensor with the patient at a location remote from the first sensor;

sensing physiological parameters of the patient and conditions of the environment around the patient with both the first and second sensors;

converting the sensed physiological parameters and environment conditions into signals;

correlating the signals from the first and second sensors; ~~and~~

using the correlation to extract signals associated with the physiology of the patient;

calculating an energy spectrum from the signals; and

extracting signals associated with the physiology of the patient by identifying peaks in the energy spectrum corresponding to physiological parameters of the patient.

90. (Previously presented) The method of claim 89, wherein the first and second sensors comprise passive electromechanical transducers for sensing mechanical activity of the patient's body.

91. (Previously presented) The method of claim 90, wherein the sensors comprise piezoelectric sensors.

92. (Previously presented) The method of claim 89, wherein each of the first and second sensors comprise a polarized polymer film with piezoelectric properties.

93. (Previously presented) The method of claim 90, wherein each the sensors comprise a polyvinylidene fluoride (PVDF) film.

94. (Previously presented) The method of claim 92, wherein an interface is disposed between the film and the patient for facilitating transmittal of physiological parameters from the patient to the film.

95. (Currently amended) The method of claim ~~93~~ 94, wherein the interface is selected from the group consisting of gel, water, air, foam, rubber and plastic.

96. (Previously presented) The method of claim 89, wherein the sensing step comprises sensing noise and vibration in the environment around the patient.

97. (Previously presented) The method of claim 89, further comprising:

placing a third sensor in a location isolated from the patient for sensing said environmental conditions without said physiological parameters of the patient;

sensing environmental conditions with the third sensor;

converting the sensed environmental conditions into signals; and

reducing environmental interference in the signals produced by the first and second sensors by subtracting the signals produced by the third sensor from the signals produced by the first and second sensors.

98 – 106 (Cancelled).

107. (Currently amended) Apparatus suitable for passively monitoring the physiology of a patient in a vibration environment, comprising:

at least two sensors, each of said sensors being capable of passively sensing physiological parameters of a patient at a different location on the patient's body and vibration from an environment around the patient;

a converter communicating with the sensors for converting the sensed physiological parameters and environmental vibration into digital signals; and

a processor communicating with the converter for processing the digital signals to extract signals associated with the physiology of the patient by correlating signals between sensors;

wherein the processor further calculates an energy spectrum from the digital signals and extracts signals associated with the physiology of the patient by identifying peaks in the energy spectrum corresponding to selected physiological parameters.

108. (Previously presented) The apparatus of claim 107, wherein the sensors comprise electromechanical transducers for sensing mechanical activity of the patient's body and producing electrical signals in response thereto.

109. (Previously presented) The apparatus of claim 107, wherein each of the sensors comprise a polarized polymer film with piezoelectric properties.

110. (Previously presented) The apparatus of claim 109, wherein each of the sensors comprise a polyvinylidene fluoride (PVDF) film.

111. (Previously presented) The apparatus of claim 109, further comprising a pad incorporating the polarized polymer films.

112. (Previously presented) The apparatus of claim 107, further comprising a monitor communicating with the processor for displaying the physiological data in real time.

113. (Previously presented) The apparatus of claim 107, wherein the processor is in wireless communication with the converter.

114. (Currently amended) The apparatus of claim ~~107~~ 112, wherein the monitor is in wireless communication with the processor.

115. (Previously presented) The apparatus of claim 107, wherein the sensors are disposed along a patient supporting surface.

116. (Previously presented) The apparatus of claim 115, wherein the patient supporting surface comprises a medical transport.

117. (Previously presented) The apparatus of claim 107, wherein the sensors are disposed in hospital bedding.

118. (Previously presented) The apparatus of claim 107, further comprising an environmental sensor isolated from the patient for sensing the environmental vibration without sensing physiological parameters of the patient, said environmental sensor providing output signals corresponding to the environmental vibration, and subtracting the signals produced by the environmental sensor from signals produced by said at least two sensors to reduce vibration interference in the signals produced by said at least two sensors.

119. (Cancelled).

120. (Previously presented) The apparatus of claim 107, further comprising a pad incorporating the sensors, and an interface within the pad formed of material selected from the group consisting of gel, water, air, foam, rubber and plastic.

121. (Previously presented) The apparatus of claim 107, wherein the processor extracts signals associated with cardiac and respiratory activity of the patient.

122 -138 (Cancelled).

139. (Currently amended) Apparatus for passively monitoring the physiology of a patient, comprising:

a plurality of sensors for sensing mechanical activity at a plurality of different locations on the patient's body;

a converter communicating with the sensors for converting the sensed mechanical activity into a plurality of digital signals; and

a processor communicating with the converter for extracting signals due to cardiac activity of the patient by selectively comparing the digital signals from said different locations on the patient's body;

wherein the processor further transforms the digital signals into frequency signals including respiration and heart rate harmonics, and differentiates respiration and heart rate harmonics by selectively comparing signals from said different locations on the patient's body.

140. (Previously presented) The apparatus of claim 139, wherein the plurality of sensors comprise a plurality of polarized films with piezoelectric properties.

141. (Previously presented) The apparatus of claim 139, wherein the plurality of sensors comprise a plurality of polyvinylidene fluoride (PVDF) films.

142 -144 (Cancelled).

145. (Currently amended) A method for passively monitoring the physiology of a patient, comprising:

coupling a plurality of sensors with the patient at different locations on the patient's body;

sensing mechanical activity of the patient at each of said locations;

converting the sensed mechanical activity into a plurality of signals; ~~and~~

extracting signals associated with cardiac activity of the patient by selectively comparing the signals from said different locations on the patient's body; and

transforming the signals into frequency signals including respiration and heart rate harmonics, and differentiating respiration and heart rate harmonics by selectively comparing signals from different locations on the patient's body.

146 (Cancelled).

147. (Currently amended) Apparatus for passively monitoring the physiology of a patient, comprising:

at least two sensors, each sensor comprising a polarized polymer film with piezoelectric properties, for sensing physiological parameters of the patient at different parts of the patient's body;

a converter communicating with the sensors for converting the sensed physiological parameters into digital signals; and

a processor communicating with the converter for determining pulse wave velocity in response to the time difference between corresponding signals from the sensors and for converting the pulse wave velocity into signals corresponding to blood pressure data;

wherein the at least two sensors comprise a first sensor disposed at a first location along a patient supporting surface and a second sensor disposed at a second location along the patient supporting surface remote from the first location.

148 (Cancelled).

149. (Previously presented) The apparatus of claim 147, wherein the processor converts the pulse wave velocity into signals corresponding to systolic and diastolic blood pressure data.

150 (Cancelled).

151. (Currently amended) Apparatus for passively monitoring the physiology of a patient, comprising:

at least two sensors, each sensor comprising a polarized polymer film with piezoelectric properties, for sensing physiological parameters of the patient at different parts of the patient's body;

a converter communicating with the sensors for converting the sensed physiological parameters into digital signals; and

a processor communicating with the converter for determining pulse wave travel time in response to the time difference between corresponding signals from the sensors and for converting the pulse wave travel time into signals corresponding to blood pressure data;

wherein the at least two sensors comprise a first sensor disposed at a first location along a patient supporting surface and a second sensor disposed at a second location along the patient supporting surface remote from the first location.

152 (Cancelled).

153. (Previously presented) The apparatus of claim 151, wherein the processor converts the pulse wave travel time into signals corresponding to systolic and diastolic blood pressure data.

154 – 186 (Cancelled).

187. (Previously presented) A method for passively monitoring the physiology of a patient, comprising:

coupling a first sensor with the patient;

coupling a second sensor with the patient at a location remote from the first sensor;

sensing physiological signals and environmental noise and vibration with the first and second sensors;

comparing the physiological signals and environmental noise and vibration from the first sensor with the physiological signals and environmental noise and vibration from the second sensor to determine locations of the first and second sensors on the patient; and

isolating selected physiological signals from the environmental and noise vibration.